REMARKS

On December 5, 2006, an amendment was filed in response to the final Office Action of October 5, 2006. On December 21, 2006, an Advisory Action was mailed in which the amendment of December 5, 2006, was entered but none of the pending claims were allowed. Claims 1-13 and 17-30 are pending in the application. Independent claims 1, 17, 21, 28, 29, and 30 have been amended. New dependent claims 31-55 have been added. Reconsideration of the present application in view of the amendments and the following remarks is respectfully requested.

Claim Rejections – 35 U.S.C. §103(a)

Independent claims 1, 21, 28, and 30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Adaptive nonlinear neural network controller for rotorcraft vibration* by Spencer et al., 1997, SPIE Vol 3041, 538-553, (hereinafter referred to as "Spencer"), in view of *Small Business Innovation Research to Support Aging Aircraft, Priority Technical Areas and Process Improvements*, published by the National Academy of Sciences, Publication NMAB-497 (hereinafter referred to as "NMAB-497"). Applicant respectfully submits that independent claims 1, 21, 28, and 30 have been amended such that they are patentable over Spencer in view of NMAB-497.

Independent claim 1, as amended, recites "an input module configured to receive one or more input parameters associated with aeroelastic characteristics of a structure, the one or more input parameters relating to a *completed repair* of the structure." Neither Spencer nor NMAB-497 teach or suggest at least input parameters relating to a *completed repair* of the structure. Spencer discloses a rotor blade vibration control system and has nothing to do with using neural networks to analyze repairs or completed repairs at all. While NMAB-497 uses the word repair in various places in the article, it does not teach or suggest at least using a neural network to

perform aeroelastic analysis of completed repairs. At most, NMAB-497 mentions using neural networks to identify damage, such as corrosion, to determine whether a repair is necessary. These distinctions are important in part because neither the individual teachings nor the combined teachings of Spencer and NMAB-497 provide the advantages of decreasing the downtime associated with aeroelastic analysis of completed repairs on structures, such as aircraft. Therefore, even if a combination of Spencer and NMAB-497 were made, which Applicant does not concede is proper, the purported combination still would not disclose all of the elements of independent claim 1. As a result, independent claim 1 is allowable over Spencer in view of NMAB-497. Claims 2-13 and new claims 31-35 which depend from allowable independent claim 1 are therefore also allowable.

Independent claim 21, as amended, recites "receiving at least one input parameter related to a *completed repair* of an aircraft structure." Neither Spencer nor NMAB-497 teach or suggest at least input parameters relating to a *completed repair* of an aircraft structure. Applicant hereby respectfully reiterates the remarks set forth above regarding independent claim 1. Therefore, even if a combination of Spencer and NMAB-497 were made, which Applicant does not concede is proper, the purported combination still would not disclose all of the elements of independent claim 21. As a result, independent claim 21 is allowable over Spencer in view of NMAB-497. Claims 22-27 and new claims 42-44 which depend from allowable independent claim 21 are therefore also allowable.

Independent claim 28, as amended, recites "receiving at least one input parameter related to a *completed repair* of an aircraft structure." Neither Spencer nor NMAB-497 teach or suggest at least input parameters relating to a *completed repair* of an aircraft structure. Applicant hereby respectfully reiterates the remarks set forth above regarding independent claim 1. Therefore, even if a combination of Spencer and NMAB-497 were made, which Applicant does not concede

is proper, the purported combination still would not disclose all of the elements of independent claim 28. As a result, independent claim 28 is allowable over Spencer in view of NMAB-497. New claims 45-48 which depend from allowable independent claim 28 are therefore also allowable.

Independent claim 30, as amended, recites "means for receiving input parameters relating to a *completed repair* of an aircraft structure." Neither Spencer nor NMAB-497 teach or suggest at least input parameters relating to a *completed repair* of an aircraft structure. Applicant hereby respectfully reiterates the remarks set forth above regarding independent claim 1. Therefore, even if a combination of Spencer and NMAB-497 were made, which Applicant does not concede is proper, the purported combination still would not disclose all of the elements of independent claim 30. As a result, independent claim 30 is allowable over Spencer in view of NMAB-497. New claims 52-55 which depend from allowable independent claim 30 are therefore also allowable.

Independent claims 17 and 29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Spencer and NMAB-497 in view of PhD dissertation *Aeroelasticity of Morphing Wings Using Neural Networks* of Anand Natarajan, 2002, (hereinafter referred to as "Natarajan"). Applicant respectfully submits that independent claims 17 and 29 have been amended such that they are patentable over Spencer and NMAB-497 in view of Natarajan.

Independent claim 17, as amended, recites "determining input parameters relating to one or more *completed repairs* performed on a structure." Neither Spencer nor NMAB-497 teach or suggest at least input parameters relating to a *completed repairs* performed on a structure. Applicant hereby respectfully reiterates the remarks set forth above regarding independent claim 1. In addition, Natarajan does not teach or suggest at least input parameters relating to one or more *completed repairs* performed on a structure. Therefore, even if a combination of Spencer,

NMAB-497, and Natarajan were made, which Applicant does not concede is proper, the purported combination still would not disclose all of the elements of independent claim 17. As a result, independent claim 17 is allowable over Spencer and NMAB-497 in view of Natarajan. Claims 18-20 and new claims 36-41 which depend from allowable independent claim 17 are therefore also allowable.

Independent claim 29, as amended, recites "receiving a mass input related to a *completed repair*." Neither Spencer nor NMAB-497 teach or suggest at least receiving a mass input related to a *completed repair*. Applicant hereby respectfully reiterates the remarks set forth above regarding independent claim 1. In addition, Natarajan does not teach or suggest at least at least receiving a mass input related to a *completed repair*. Therefore, even if a combination of Spencer, NMAB-497, and Natarajan were made, which Applicant does not concede is proper, the purported combination still would not disclose all of the elements of independent claim 29. As a result, independent claim 29 is allowable over Spencer and NMAB-497 in view of Natarajan. New claims 49-51 which depend from allowable independent claim 29 are therefore also allowable.

Newly added claims provide further distinction from Spencer, NMAB-497, and Natarajan. For example, with regard to new dependent claims 32, 37, 42, 45, 49, and 52, Spencer, NMAB-497, and Natarajan certainly do not teach or suggest at least performing an aeroelastic analysis on a completed repair after the repair is completed and before the structure is used in flight. Also, for example, with regard to new dependent claims 35, 41, 44, 48, 51, and 55, Spencer, NMAB-497, and Natarajan certainly do not teach or suggest at least the use of inputs of weight and the location of the weight relating to completed repairs performed on a structure which exceed a predetermined category of approved repair parameters.

Please charge the amount of $120.00 for filing this response within the first month of extension or any additional fees which may be required or credit any overpayment to Deposit Account No. 23-2126.

Conclusion

In view of the aforesaid, reconsideration and allowance of all claims at issue are respectfully solicited.

Respectfully submitted,

Date: February 5, 2007

By: /Louis DiSanto/

Gary R. Gillen
Reg. No. 35,157
Louis DiSanto
Reg. No. 51,331

Wildman, Harrold, Allen & Dixon LLP
225 West Wacker Drive
Chicago, IL 60606
Phone: (312) 201-2000
Fax: (312) 201-2555